THE FOREST PEST SITUATION IN MICHIGAN - - 1968

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The summer of 1968 was no different from other years, in that many forest pests were present and causing widespread defoliation, damage and concern. Every year seems to have its share of problems, however, the specific problems and forest pests vary from year to year. Some pests such as the white pine weevil, continued at relatively constant levels, others drastically declined, while some showed spectacular increases.

Fortunately, ground water levels and rainfall were at a normal level during 1968 aiding the trees to withstand pest attack that might have otherwise resulted in tree mortality. This is in contrast to the summer of 1966 when severe drought conditions were present in parts of the state during July and August and many trees died.

One of the more spectacular population collapses took place in a small outbreak of the saddled prominent caterpillar on hardwoods in Mackinac and Luce counties, where approximately 300 acres were defoliated. In mid-August, it was reported by the Area Forester that the larvae turned dark in color and began dropping. Upon impact the larvae almost completely disintegrated leaving light brown stains on everything they hit. By late August, not a single living larva could be found. Apparently a disease has brought this outbreak to an end.

Since 1960, the forest tent caterpillar has shown signs of population build-up but not until 1967 were the caterpillars sufficiently numerous to cause heavy defoliation of the trees. During 1967, about 3,000 acres of hardwoods in Antrim and Charlevoix counties were heavily infested. Light populations existed throughout much of the rest of the counties.

In 1968, a population explosion occurred and defoliation was readily noticeable from the air on 260,000 acres in Antrim County, 31,000 acres in Charlevoix County, and 27,000 acres in Kalkaska County. In addition, defoliation by the forest tent caterpillar occurred in spots in Leelanau, Grand Traverse and Otsego counties. The acreage figures are the gross areas including farm lands, swamp forest types and other non-susceptible types. Probably about 50 percent of the total area is aspen, maple or other infested forest types. A considerable acreage could be added to these that was very lightly infested and did not have sufficient defoliation to be detected during the aerial survey.

At the present time we feel that spraying will be necessary around resort areas, towns and villages, and some private homes in order to alleviate the nuisance of the crawling caterpillars. If this is not done, some economic loss may be suffered as a result of reduction of tourist business.

In the forest situation, however, it is expected that serious damage will not occur and parasites and/or weather will bring about a collapse of the epidemic in two or three years. No general forest spraying is contemplated at this time.

Cocoon surveys indicated approximately 60 percent of the pupae were parasitized, and therefore the population is still expected to increase next summer. Parasitism, according to studies in other states, must reach about 90 percent to be effective in causing an epidemic to collapse. Egg mass surveys are being planned and will be conducted during the fall and winter to help predict the population expected in 1969. On the basis of these surveys, information will be available for the public on the expected area of 1969 forest tent caterpillar outbreaks and an estimate of the severity.

Previous outbreaks in Michigan have been primarily in aspen types, but the current defoliation is centered in maple, beech, elm, basswood and aspen forests.

Widespread defoliation by a leaf roller on oak delayed the aerial photography project of the Department to provide new photos for the forest area of northern Lower Michigan. This leaf roller has been identified in the past as the fruit tree leaf roller, Archips argyrospila, but has recently been identified by John Newman at Michigan State University as Archips semiferanus. This insect is also known as the "greeny worm" by the fishermen who have taken a liking to this forest pest. When nearly full grown, the caterpillars drop from the trees on threads when disturbed, and if the trees are over a stream, the caterpillars are quickly devoured by the trout. Fishermen have found that by using green flies they have been able to catch trout that normally do not feed in the daytime.

Most of the oak in northern Lower Michigan north of Harrison, south of Onaway, and east of Highway I-75, were defoliated to some extent. Generally the defoliation did not extend more than a few miles west of I-75. Black and red oak are the principal hosts with white oak only lightly infested.

This is the second year of heavy defoliation over the large area, and third year in some smaller spots. Most of the trees grow a second set of leaves during the summer after the defoliation and appear to be in good condition by the end of the summer. However, throughout the area, particularly on the poorer sites, trees are beginning to die from the top down. The extent to which the insect defoliation is responsible for the tree mortality is not known.

Very few years go by without an outbreak of the jack pine budworm someplace in northern Michigan. The summer of 1968 was no exception as budworm populations were higher and more widespread than in recent years. The principal exception to the increase was on the plains area of Baraga County where a marked decline occurred, not in the extent of the infestation, but in the severity. The plains has suffered from two years of severe defoliation resulting in some tree mortality and many trees with dead tops. Unfortunately, salvage operations were not progressing as rapidly as desired due to the lack of favorable markets for the wood.

Elsewhere in the Upper Peninsula, in areas of jack pine, the budworm generally increased. Defoliation was reported in Marquette County on the Michigamme and Escanaba River State Forests with over 20 sections suffering 60 to 80 percent defoliation. In Schoolcraft County the budworm increased greatly on the Manistique River State Forest, and also west of M-94 in the vicinity of Steuben on the Hiawatha National Forest. The Mackinac State Forest in Mackinac County reported light defoliation throughout the forest area. Light to heavy defoliation occurred in Alger County on the Grand Sable State Forest with heaviest defoliation along the eastern section of the county in the Sunken Lake and Dutch Fred Lake area. To the east, increasing budworm activity was reported on the Danaher Plains section of the Tahquamenon River State Forest in Luce County. In northern Luce County on the Lake Superior State Forest, a general brown appearance of the jack pine was evident due to budworm defoliation. Some tree mortality was noted along County Road 407 near Sleeper Lake in north central Luce County.

Budworm populations in Lower Michigan were generally at a low level. Reports from the Ogemaw, Betsie River, Jordan River, Fife Lake, Hardwood, Au Sable, Pigeon River, Black Lake, and Oscoda State Forests indicated that the budworm could be found, but with a few exceptions, noticeable defoliation was not apparent.

Jack pine is also being attacked by the jack pine sawfly in the eastern Upper Peninsula, with the heaviest defoliation in Luce and Alger counties. Overmature timber on private lands is the center of the outbreak in eastern Alger County. In Luce County, the sawfly was common throughout the county with most jack pine in the northern part of the county attacked by either the sawfly, budworm, or both. In general, in the areas of heavy 1967 defoliation, the sawfly population was down and severe defoliation did not occur in 1968.

Defoliation by cankerworms was quite extensive on scattered trees in northern Lower Michigan. Stripped elms were common including a 3 acre elm woodlot in Cheboygan County that was over 90 percent defoliated. In the Upper Peninsula, 60 to 80 acres of oak and aspen were stripped by cankerworms in Menominee County at the County Part at Shakey Lakes.

The build-up of the cherry shell scallop moth that became noticeable in 1967 greatly increased in 1968 with most cherry trees in Alger, Luce and Mackinac counties being attacked. The heaviest infestations were in eastern Alger County, northern Mackinac County, and southern Luce County. Many of the heavily attacked trees have died. In southwestern Luce County, during the first two weeks of June, the moths were present in the woods in such large numbers that they were annoying to anyone working in the woods by fluttering into their eyes and around their faces.

Walkingsticks continued at a low level in Ogemaw County following their decline a decade ago. Prior to that time, over 40,000 acres were defoliated every second year since the mid-1920's.

Following a low period of 15 years, the birch skeletonizer greatly increased and caused noticeable browning of white birch foliage during August on the Hardwood State Forest in Emmet and Cheboygan counties. It is expected that this pest will increase and become more widespread in 1969. Previous outbreaks of

the skeletonizer have appeared rather suddenly over the Lake States, lasted a year or two, and disappeared.

Reports from the Iron Range State Forest in the western Upper Peninsula, and the Grand Sable and Mackinac State Forests in the eastern Upper Peninsula indicate that larch sawfly defoliation increased in 1968. In Lower Michigan, the Hardwood State Forest in Emmet and Cheboygan counties had much heavier defoliation than the previous year, with some complete stripping of the foliage from the trees. Elsewhere in Lower Michigan, the populations appeared to be at the same level as the previous year at a generally low level. After decades of quiescence, infestations began to build up in 1950, reached a peak about 1959, and since that time have flucuated greatly from year to year, and from stand to stand.

Periodically, the pine pitch midge becomes abundant in some localities killing a large number of jack pine twigs. During 1968, many open-grown jack pine trees in Crawford and Montmorency counties were attacked. The damage seems to be particularly noticeable along roadsides.

Scleroderris pine canker continues to kill branches and small trees throughout the Upper Peninsula and in Crawford, Otsego, Antrim and Kalkaska counties in Lower Michigan. Damage appeared to be somewhat less in 1968 than in the previous few years.

Anthracnose of sycamore trees was prevalent in the southern part of Lower Michigan, resulting in many thin crowned trees.

European pine sawfly infestations are usually controlled by spraying on valuable trees in the southern part of Lower Michigan. Elsewhere in that area the sawflies can be commonly found and defoliation exists. Fortunately, little or no tree mortality follows even several years of heavy defoliation. This sawfly is becoming more widespread through Lower Michigan with infestations now present as far north as Antrim County.

Elm throughout Lower Michigan continues to die from infection by the Dutch elm disease. In many lowland woodlots elm has been virtually eliminated. In the Upper Peninsula the infection in Menominee County has spread into Delta County near Escanaba. Two other infection centers are known to exist in the Upper Peninsula, one near Germfask, and one at Sault Ste. Marie.

Three State Forest plantations were sprayed with back-pack mistblowers for the control of the red-headed pine sawfly. The insecticide used was methoxychlor. On the Munuscong State Forest in Chippewa County, 2.8 acres were treated with almost complete kill of the larvae. Eight acres of 3 to 5 foot red pine and jack pine were sprayed on the Hardwood State Forest in Cheboygan County with about 90 percent control. A light wind during the spraying reduced the effectiveness of the application. The largest spraying operation of 45 acres proved costly and somewhat uneffective although 90 percent kill was attained. The infestation prior to spraying was so large that the remaining 10 percent will be sufficient to produce a damaging population in 1969. This operation, on the Mackinac State Forest was in a plantation of 12 to 15 foot red pine, the size of the trees contributing to the difficulty in spray application with the back-pack mistblowers.

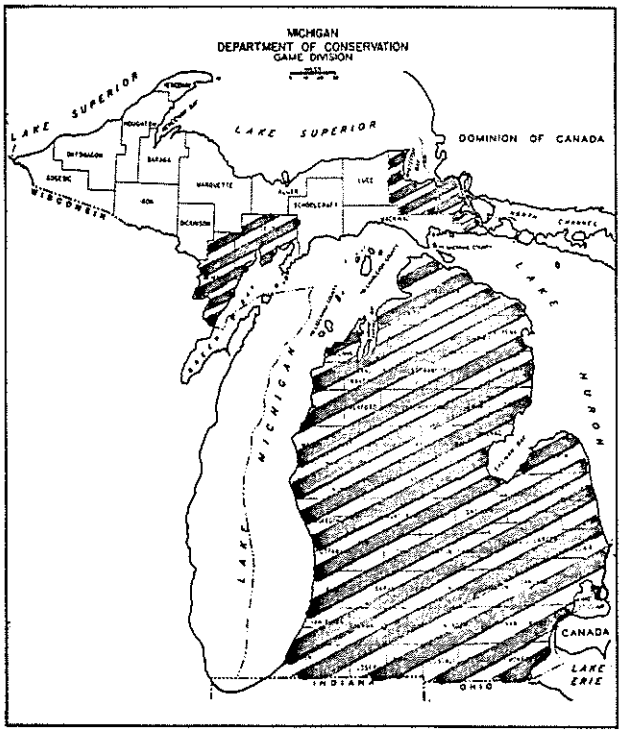
Many other pests were abundant and caused concern on public and private lands. Eastern spruce gall aphids were a problem to Christmas tree growers in the southern part of Lower Michigan. Saddled prominent caterpillars were widespread on Beaver Island but caused little defoliation of the hardwoods. The green-striped mapleworm almost completely defoliated 110 acres of northern hardwoods in Chippewa County. Other pests causing localized problems were the walnut caterpillar, fall webworm, eastern tent caterpillar, maple twig pruner, linden looper, ugly-nest caterpillar, pales weevil, Zimmerman pine moth, and anomala beetle.

Forest tent caterpillar outbreak

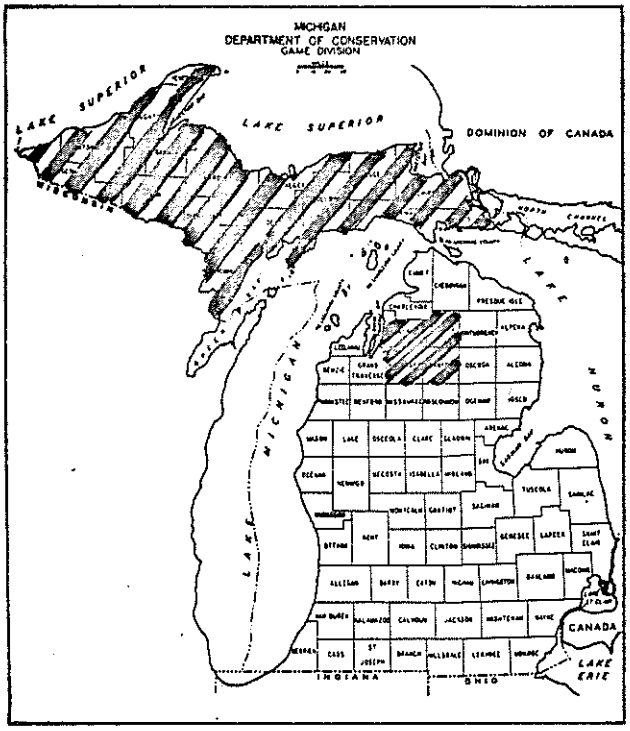
Fruit tree leaf roller* moderate to heavy defoliation

* Probably Archips semiferanus

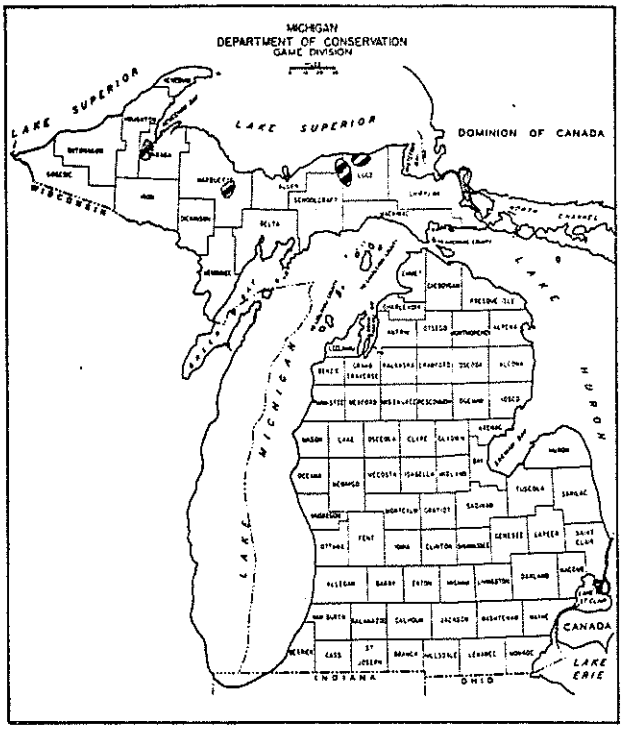
Counties with known Fomes annosus infections



Counties with known Dutch elm disease infections



Counties with Scleroderris pine canker infections



Jack pine budworm outbreaks